



Sonoma-Marin Area Rail Transit
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GENERAL MANAGER

Eddy Cumins

August 19, 2026

Sonoma- Marin Area Rail Transit Board of Directors
5401 Old Redwood Highway, Suite 200
Petaluma, CA 94954

SUBJECT: Adopt Resolution 2026-29 authorizing the General Manager to execute Funding Agreement No. FN-OT-26-001 with the County of Sonoma

Dear Board Members:

RECOMMENDATIONS:

Adopt Resolution 2026-29 authorizing the General Manager to execute Funding Agreement No. FN-OT-26-001 with the County of Sonoma to design roadway improvements as part of SMART's Progressive Design-Build Healdsburg Extension Project under its Phase I Agreement No. CV-DB-25-001.

SUMMARY:

The County of Sonoma ("County") has requested that SMART include the design of roadway improvements as part of the Progressive Design-Build Healdsburg Extension Project. This Funding Agreement will provide for the development of 65% level design to widen a portion of Old Redwood Highway beneath the SMART track. This design will be fully funded by the County in an amount of \$640,375.27.

BACKGROUND:

SMART in conjunction with its Progressive Design-Build Entity ("PDBE"), Stacy and Witbeck/Herzog, A Joint Venture ("SWH") is developing construction documents for the Healdsburg Extension Project under the Progressive Design-Build Phase I Agreement No. CV-DB-25-001. The County has requested that SMART include the design of roadway improvements in the project. Specifically, the County would like SMART's contractor, SWH, to design a widened section of Old Redwood Highway where it passes beneath the SMART track. This opportunity to widen the road has arisen because SMART will be replacing the railroad bridge over Old Redwood Highway. The roadway improvements will increase the line-of-sight through the curve, widen roadway shoulders, and improve the bike lanes along the shoulder of the road. This work is being advanced to a 65% design level to be consistent with SMART's work included in the Phase I Agreement No. CV-DB-25-001. The County, through the Funding Agreement, will pay for the design of their facilities in an amount of \$640,375.27. Final design and construction of the improvements is anticipated to be added to the contract in the future.

SMART is supportive of assisting the County with their work. Combining work into a single contract typically realizes benefits from economies of scale and minimizes disruptions to the public. SMART has implemented work for many municipalities over the years as we have constructed the rail and pathway system.

FISCAL IMPACT: All costs associated with this work will be paid by the County of Sonoma.

Sincerely,

/s/

Bill Gamlen, P.E.
Chief Engineer

Attachments: 1.) Resolution 2026-29
 2.) Funding Agreement No. FN-OT-26-001

RESOLUTION OF THE BOARD OF DIRECTORS OF THE SONOMA-MARIN AREA RAIL TRANSIT DISTRICT ("DISTRICT") AUTHORIZING THE GENERAL MANAGER TO ENTER INTO FUNDING AGREEMENT NO. FN-OT-26-001 WITH THE COUNTY OF SONOMA ("COUNTY") FOR DESIGNING COUNTY IMPROVEMENTS AS PART OF THE HEALDSBURG EXTENSION PROJECT ("PROJECT")

WHEREAS, the District is developing construction documents for the Healdsburg Extension Project under its Progressive Design-Build Phase I Agreement No. CV-DB-25-001; and

WHEREAS, the County has requested the District to prepare 65% level design documents for roadway improvements that are within SMART's project limits; and

WHEREAS, the County and the District agree that it makes sense to combine the work into SMART's Progressive Design-Build Healdsburg Extension Phase I Agreement No. CV-DB-25-001 to improve coordination within District's right-of-way; and

WHEREAS, the County has agreed with a price proposal from the District's Healdsburg Extension Progressive Design-Build Entity ("PDBE"), Stacy and Witbeck/Herzog, A Joint Venture for the design of the County's roadway improvements; and

WHEREAS, this Funding Agreement No. FN-OT-26-001 establishes that the District's Contractor, through its Progressive Design-Build Phase I Agreement, will design the County's roadway improvements in the amount of \$640,375.27; and

WHEREAS, the estimated cost of design does not represent a maximum not-to-exceed amount, and County is responsible for all costs associated with the County's share of the project, including if costs exceed the estimated amount; and

NOW, THEREFORE, BE IT RESOLVED THAT THE BOARD OF DIRECTORS OF SMART HEREBY FINDS, DETERMINES, DECLARES, AND ORDERS AS FOLLOWS:

1. The foregoing Recitals are true and correct and are incorporated herein and form a part of this Resolution.
2. The General Manager is authorized to execute Funding Agreement No. FN-OT-26-001 with the County of Sonoma upon terms and conditions substantially similar to the attached draft as part of SMART's Progressive Design-Build Healdsburg Extension Project.

Resolution No. 2026-29
Sonoma-Marin Area Rail Transit District
August 19, 2026

PASSED AND ADOPTED at a regular meeting of the Board of Directors of the Sonoma-Marin Area Rail Transit District held on the 19th day of August, 2026, by the following vote:

//

DIRECTORS:

AYES:

NOES:

ABSENT:

ABSTAIN:

Chris Coursey, Chair, Board of Directors
Sonoma-Marin Area Rail Transit District

ATTEST:

Kyreen Jorgensen, Clerk of the Board of Directors
Sonoma-Marin Area Rail Transit District

**FUNDING AGREEMENT
BETWEEN
SONOMA-MARIN AREA RAIL TRANSIT DISTRICT AND COUNTY OF SONOMA
FOR
DESIGN OF OLD REDWOOD HIGHWAY UNDERCROSSING**

THIS FUNDING AGREEMENT ("Agreement") is entered into as of _____, 2026 by and between the **SONOMA-MARIN AREA RAIL TRANSIT DISTRICT** (District), a public entity duly established under the laws of California, and the **COUNTY OF SONOMA** (County), a political subdivision of the State of California, collectively, (the "Parties").

RECITALS

- A. The SMART rail corridor, historically known as the Northwestern Pacific Railroad Authority (NWPRA), generally parallels Highway 101 running north-south in Sonoma and Marin Counties. The corridor is owned by the District from Milepost (MP) 89.0 in Cloverdale southward to MP 11.4 in Corte Madera.
- B. District has completed California Environmental Quality Act (CEQA) review and is proceeding with design and construction of passenger rail service and accompanying multi use path along an approximately 70-mile existing rail corridor extending from Cloverdale in Sonoma County, California, to a location near the ferry terminal in Larkspur, Marin County, California.
- C. County desires to widen the undercrossing of Old Redwood Highway (the "County Work").
- D. County Work is the type of work contemplated by District and its contractor, as part of the construction of the passenger rail extension to Healdsburg.
- E. County and District staff have determined that that it will be cost effective and minimize impacts to District's construction and rail operations to construct the County Work as part of the construction of the passenger rail extension to Healdsburg.
- F. At the request of County, District is agreeable to include the 65% design of the County Work ("County Design Work") through District's progressive design-build contract CV-DB-25-001. The detailed cost proposal and a detailed scope of services are documented in Exhibit A and Exhibit C which is incorporated and included as part of this Agreement.
- G. County through this Agreement, has agreed to pay for all costs associated with the County Design Work.
- H. Upon completion of 65% design, District and County anticipate revising this funding agreement or entering into a new agreement to complete design and construction of the County Work at County's cost.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, County and District agree as follows:

1. RECITALS

- A. The above recitals are true and correct and are hereby incorporated in and expressly form a part of this Agreement.

2. COORDINATION

- A. County shall coordinate the County Design Work with District's Chief Engineer or his designee, contact information for the Parties' respective representatives is set forth below:

District	County
Bill Gamlen	Johannes J. Hoevertsz
Chief Engineer Sonoma Marin Area Rail Transit (SMART) 5401 Old Redwood Highway, Suite 200 Petaluma, CA 94954	Director of Transportation and Public Works County of Sonoma 2300 County Center Drive, Suite B100 Santa Rosa, CA 95403
Phone: 707.794.3330	Phone: 707.565.2231
Fax: 707.794.3037	Fax: 707.565.2620
Email: BGamlen@sonomamarintrain.org	Email: Johannes.Hoevertsz@sonoma-county.com

3. SCOPE OF WORK

- A. County Design Work:

The design-build contractor will develop 65% construction documents for the widening of Old Redwood Highway underneath the railroad bridge to improve traffic operations and to accommodate current and future transportation needs. The roadway will be widened to 48' and will consist of the following features:

- Two 12' travel lanes.
- Two 6.5' bike lanes (5' bike lane with a 1.5' buffer).
- Two 2' paved shoulders.
- Two 2' road shoulders (unpaved).
- Providing a 15' minimum vertical clearance from the bridge soffit to the roadway surface to help ensure safe passage for vehicles, including emergency and maintenance equipment.
- Preparing a Hydrology/hydraulics report to analyze the existing drainage system and proposed drainage improvements to reduce recurring flooding issues, as feasible, and to

prevent stormwater from ponding on the roadway from the creek outfall to the roadway surface.

The detailed cost proposal and a detailed scope of services are documented in Exhibit A and Exhibit C which is incorporated and included as part of this Agreement.

4. DISTRICT'S RESPONSIBILITIES

District shall be responsible for the following:

- A. Contract Administration: District will include the County Design Work in District's progressive design-build contract CV-DB-25-001. District shall administer the contract for the County Design Work, at County's expense.
- B. Procurement: District has procured its progressive design-build contract CV-DB-25-001 in compliance with all applicable legal requirements pursuant to the Public Contract Code and District's progressive design-build authority.
- C. Insurance and Indemnification: District shall require all contractors engaged in the County Design Work to insure, indemnify, and hold harmless the County to the same extent such contractors indemnify and hold harmless District as to the County Design Work and associated activities. District shall provide evidence of same to County prior to the commencement of the County Design Work.
- D. Prevailing Wages: District's progressive design-build contract complies with prevailing wage requirements as provided for under District's Design-Build Contract CV-DB-25-001 and the Labor Code. Accordingly, District will cause all County Design Work to comply with the same applicable prevailing wage laws and regulations, including satisfying all obligations as an "awarding body" as defined by Labor Code section 1722.
- E. Records: District shall maintain complete and accurate records of all transactions related to the County Design Work in compliance with generally accepted accounting principles. Such records shall be available to County at all reasonable times for inspection and analysis.
- F. Notifications: District shall provide monthly updates to County with copies of contractor invoices for the County Design Work. District shall notify County in advance regarding the following, including any changes thereto: 1. Date of commencement of the County Design Work; 2. All County Design Work working hours in County right of way; 3. All traffic control plans related to the County Design Work.

5. COUNTY'S RESPONSIBILITIES

County agrees to perform the following:

- A. Payment: The County shall be responsible for all costs associated with the County Design Work as shown in Exhibit B. The County shall remit payment to District upon execution of this Agreement in the amount of \$640,375.27. This amount does not represent a cap on costs for the County Design Work. County will be responsible for any increase in cost associated with the County's Design Work including unforeseen circumstances or changes initiated by County. In the event District anticipates the cost for County Design Work will exceed the amount of this Agreement, District will promptly notify County. Payments in excess of the amount stated in this Agreement must be approved in advance by County and reflected in amendment to this Agreement. Upon County's approval of the County Design Work, District will perform a true-up and return any unexpended funds to County within 30 days.
- B. Final Plans, Specifications: County shall review and provide written comments or approval of the 65 percent design plans and specifications within twenty (20) calendar days of submittal to County. If County fails to approve or provide written comments on any of design plans within the review period, County shall be deemed to have approved such design plans, unless County requests a reasonable extension for its review. Approvals shall not be unreasonably withheld.
- C. Utilities: County shall coordinate with public and private utility companies to resolve any utility conflicts that may arise as part of the County Design Work.
- D. Right of Entry: County shall provide any required encroachments permits to the District's Contractor at no cost for work at the Old Redwood Highway overcrossing. Additionally, County shall provide SMART and the District's Contractor right of entry for access to County-owned land adjacent to the Old Redwood Highway bridge and roadway, in locations covered by SMART's CEQA document.
- E. Environmental Compliance: County shall be responsible for preparing and documenting any required CEQA determination for County Work.
- F. Title: Upon approval of the plans and specifications, all rights to such work product shall vest with County.

6. ADDITIONAL REQUIREMENTS

- A. Amendments to Agreement: This Agreement may be amended only by the mutual written consent of both Parties.
- B. Indemnification: County shall indemnify, defend, protect, hold harmless, and release District, its officers, agents, and employees, from and against any and all claims, loss, proceedings, damages, causes of action, liability, costs, or expense (including attorneys' fees and witness costs) arising from or in connection with, or caused by any act, omission, or negligence of County in connection

with the performance of this Agreement. This indemnification obligation shall not be limited in any way by any limitation of the amount or type of acts, disability benefit acts, or other employee benefit acts.

- C. Termination: This Agreement shall terminate upon County's approval of the County Design Work as set forth in paragraph 5(B) above. Notwithstanding the foregoing, either party may terminate this Agreement by giving 30-days prior written notice to the other party, in the manner described in Section 6(D) of this Agreement of its intent to terminate. In the event of termination by the County, County shall pay District for all cost and expenses for the proportion of County Design Work completed, along with any associated cost or claims arising from the termination of the County Design Work except to the extent of breach or violation by District or District's contractor. In the event of termination by District, District shall provide County with all plans, specifications, and other design and construction written work product for the County Design Work, in electronic format, sufficient to facilitate County completion of the County Design Work.
- D. Notice: Unless otherwise requested by a party, all notices, demands, requests, consents or other communications which may be or are required to be given by either party to the other shall be in writing and shall be deemed effective upon service. Notices shall be deemed to have been properly given when served on the party to whom the same is to be given by hand delivery or by deposit in the United States mail addressed to the party as follows:

District: Bill Gamlen, P.E
Chief Engineer
Sonoma-Marin Area Rail Transit District
5401 Old Redwood Highway
Petaluma, CA 94954

County: Johannes J. Hoevertsz
Director of Public Infrastructure
County of Sonoma
400 Aviation Drive, Suite B100
Santa Rosa, CA 95403

When a notice is given by a generally recognized overnight courier service, the notice, invoice, or payment shall be deemed received on the next business day. When a notice or payment is sent via United States Mail, it shall be deemed received seventy-two (72) hours after deposit in the United States Mail, registered or certified, return receipt requested, with the postage thereon fully prepaid. In all other instances, notices, and payments shall be effective upon receipt by the recipient. Changes may be made in the names and addresses of the person to whom notices are to be given by giving notice pursuant to this paragraph.

- E. Governing Law: This Agreement shall be governed by and construed in accordance with the laws of the State of California. Venue shall be the County of Sonoma.

- F. Entire Agreement: With regard to the County Design Work and matters covered by this Agreement, this instrument contains the entire agreement between the parties, and no statement, promise, or inducement made by either party or agents of the parties that is not contained in this written contract shall be valid or binding; and this contract may not be enlarged, modified, or altered except in writing signed by the parties.
- G. Authority of County and District: The undersigned hereby represent and warrant that he or she has authority to execute and deliver this Agreement on behalf of County and District.
- H. No Waiver of Breach: The waiver by any of the Parties of any breach of any term or promise contained in this Agreement shall not be deemed to be a waiver of such term or provision or any subsequent breach of the same or any other term or promise contained in this Agreement.
- I. Construction: To the fullest extent allowed by law, the provisions of this Agreement shall be construed and given effect in a manner that avoids any violation of statute, ordinance, regulation, or law. The parties covenant and agree that in the event that any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired, or invalidated thereby. If necessary to effectuate the intent of the Parties, the Parties will negotiate in good faith to amend this Agreement to replace the unenforceable language with enforceable language that reflects such intent as closely as possible. County and District acknowledge that they have each contributed to the making of this Agreement and that, in the event of a dispute over the interpretation of this Agreement, the language of the Agreement will not be construed against one party in favor of the other. County and District acknowledge that they have each had an adequate opportunity to consult with counsel in the negotiation and preparation of this Agreement.
- J. Time of Essence: Time is and shall be of the essence of this Agreement and every provision hereof.
- K. No Third-Party Beneficiaries: Nothing contained in this Agreement shall be construed to create and the parties do not intend to create any rights in third parties. No incidental beneficiary, whatever relationship such person may have with the Parties, shall have any right to bring an action or suit, or to assert any claim against the Parties under this Agreement.
- L. Captions: The captions in this Agreement are solely for convenience of reference. They are not a part of this Agreement and shall have no effect on its construction or interpretation.
- M. Acceptance of Electronic Signatures and Counterparts: Signatures delivered by scanned image as an attachment to electronic mail or delivered electronically through the use of programs such as DocuSign must be treated in all respects as having the same effect as an original signature. Each party further agrees that this Contract may be executed in two or more counterparts, all of which constitute one and the same instrument.

- N. Unenforceable Provisions: If a court of competent jurisdiction finds any provision of this Agreement to be illegal, invalid or unenforceable, the Parties agree that such provision will be enforced to the maximum extent permissible so as to effect the intent of the Parties, and the validity, legality and enforceability of the remaining provisions of this Agreement will not in any way be affected or impaired thereby. If necessary to effectuate the intent of the Parties, the Parties will negotiate in good faith to amend this Agreement to replace the unenforceable language with enforceable language that reflects such intent as closely as possible.

IN WITNESS WHEREOF, the District and the County have executed this Agreement as of the date first above written.

COUNTY OF SONOMA:

SONOMA-MARIN AREA RAIL TRANSIT DISTRICT:

By: _____

By: _____

Johannes J. Hoevertsz
Director of Transportation and Public Works
County of Sonoma

Eddy Cumins
General Manager
SMART

ATTEST:

By: _____

County Clerk

APPROVED AS TO FORM:

APPROVED AS TO FORM FOR DISTRICT:

By: _____

By: _____

Luke Bowman, Deputy County Counsel

Jessica Sutherland, SMART Counsel

EXHIBIT A
DESIGN COST PROPOSAL



SWH-SMART-001R3

August 5, 2026

Mr. Michael Wiltermood
Sonoma Marin Area Rail Transit
5401 Old Redwood Hwy, Suite 200
Petaluma, California 94954

Reference: Design Civil, Track, and Structures Improvements of the
SMART Healdsburg Extension – Phase I
Contract No. CV-DB-25-001
SWH Job No. 35783

Subject: CN 001 – Old Redwood Highway Widening and Drainage Improvements
Cost Proposal – Rev.3

Dear Michael,

SWH is in receipt of CN 001 for the proposed design changes for the Old Redwood Highway Widening and Drainage Improvements. The SWH proposed price for this change is \$627,875.27. This price includes producing a hydrology report, 35%, and 65% design drawings, and associated construction estimates for this proposed change. For more detailed information, please see the attached GHD "Scope of Services" Document.

As indicated in the attached GHD's Scope of Services, if notice to proceed is received in early August 2026, the 35% design would be delivered in late January 2027, and the 65% design in late July 2027.

Cost to complete the design and Issue for Construction, and cost associated with construction will be provided in a Phase II estimate that will take place after 100% scope documents are completed or at any point that is agreed to by SMART and SWH.

SWH will assist SMART in providing road closure requirements for the county to facilitate construction. Additionally, drainage changes and overhead utility relocation agreements will need to be obtained.

As some of these costs are the responsibility of the county, SWH proposes tracking construction costs by breaking the WBS up as per the breakdown below, and further detailed in attachment:

- Railroad Bridge Construction
 - 50% Base Cost (Based on Weight for 80' bridge initially proposed prior to widening)
 - 50% County Cost (Based on Weight for longer bridge)
- Ped Bridge Construction
 - 60% Base Cost (Based on Weight for 100' bridge initially proposed prior to widening)
 - 40% County Cost (Based on Weight for longer bridge)
- Bridge Demo
 - 100% Base Cost
- Wall Demo
 - 100% County Cost
- New Wall Construction
 - 100% County Cost
- Drainage Adjustment
 - 100% County cost



- Roadway Construction
 - 100% County cost

Attachments to letter include:

1. Pricing Sheet
2. GHD Fee Proposal Backup
3. Old Redwood Hwy ROM cost vs CN 001
4. GHD Scope of services
5. GHD Exhibits

Sincerely,

Stacy Witbeck/Herzog, JV

Nick Slama
Project Manager

EXHIBIT B
PROJECT COST

ITEM	ESTIMATE
35% Design Costs	\$323,287.70
65% Design Costs	\$304,587.57
SMART Administration	\$12,500.00
TOTAL	\$640,375.27

EXHIBIT C

SCOPE OF SERVICES

Scope of Services

Healdsburg Extension Project Change Notice 001 – Old Redwood Highway Widening

**RFQ NO. CV-DB-25-
001**



Scope of Services

Project Objective

GHD, Inc. and its subconsultants (“CONSULTANT”) will provide engineering (“Services”) under Change Notice 001 (CN 001) to the Stacy Witbeck/Herzog Joint Venture (SWH) to widen Old Redwood Highway for Phase I of the Healdsburg Extension Progressive Design-Build contract through the 100% submittal milestone. CONSULTANT will provide design engineering professional services for the following elements of work associated with CN 001:

- Field Surveying and Mapping
- Right-of-Way Evaluation
- Civil and structures elements
- Roadway
- Utility facilities and relocations (see Task 7.10 *Utility Plans* for the scope delineation between SWH and CONSULTANT)

CN 001 Project Description

The Healdsburg Extension Project limits extend from the SMART Windsor Station at MP 63.0 to Lytton Springs Road at MP 72.00. The project’s primary objectives are to extend SMART passenger rail service 9 miles to the north, to construct a new SMART station in the City of Healdsburg between Front Street and Healdsburg Avenue, and to extend the non-motorized pathway from the Town of Windsor to the City of Healdsburg where it will tie into the existing Foss Creek pathway. The current baseline scope of services assumes that the Old Redwood Highway grade separation would remain as-is and that the existing drainage inlet located at the low point of the roadway would be rehabilitated to properly convey storm runoff into the existing drainage system.

Roadway and Structures

Existing Conditions

On approach to the intersection of Eastside Road and the Old Redwood Highway grade separation, Old Redwood Highway is a rural two-lane highway functionally classified as a major collector within the County of Sonoma. The highway links the municipalities of Windsor to the south and Healdsburg to the north. Data from 2017 places the two-way Average Daily Traffic (ADT) of Old Redwood Highway at approximately 5,000 vehicles per day (vpd) near the grade separation. The posted speed limit of Old Redwood Highway is 45 mph and marked for no-passing due to poor sight distance.

On approach to the Old Redwood Highway grade separation, the typical roadway section consists of a travel lane in each direction with shoulders and/or Class II bike lanes. At the Old Redwood Highway grade separation, the shoulders and/or Class II bike lanes taper down to two 12-foot-wide travel lanes in each direction with no shoulders. Approximately 80 feet to the west of the Old Redwood Highway grade separation, there is an all-way stop controlled intersection with Eastside Road. The stop controls are enhanced with passive stop beacons in all directions (northbound and southbound Old Redwood Highway and westbound Eastside Road).

The existing Old Redwood Highway through plate girder (TPG) rail bridge was built in 1915 and constructed with a 50-degree skew relative to Old Redwood Highway. The existing bridge abutments are located at the edge of travel lane providing an approximate clear span of 24-feet just enough to accommodate two 12-ft travel lanes. The existing bridge provides a substandard vehicular clearance of 13'-11". Three of the four bridge approaches/departures include pre-cast concrete k-rail placed at the edge of pavement, and there is an approximate 120-ft long metal beam guardrail on the southbound departure side of Old Redwood Highway.

During the Alignment Phase, the CONSULTANT determined that retrofitting the existing Old Redwood Highway TPG rail bridge was not advisable due to the following considerations:

- The bridge has surpassed the typical 100-year design life for steel bridges and has numerous structural deficiencies as documented during a bridge inspection conducted by the CONSULTANT on November 6, 2025.
- The existing bridge was designed to accommodate E55 live loading and retrofitting the superstructure and substructure to accommodate Cooper E80 live loading was deemed cost prohibitive.
- The existing bridge abutments were built with a 50-degree skew relative to the roadway which exceeds the 30-degree maximum skew recommended in the AREMA Manual, UPRR/BNSF Joint Guidelines, and SMART's Design Criteria Manual.
- The horizontal clearance envelope across the existing bridge, as measured in the field, is 16'-0" which is less than the 18'-0" minimum horizontal clearance defined in AREMA Figure 28-1.2 for a train envelope.
- The existing vertical clearance under the rail bridge is 13'-11" which poses a risk of damage from oversized or unauthorized loads that may pass under the bridge. The existing vertical clearance is also less than the clearances recommended in the BNSF/UPRR Guidelines for Railroad Grade Separation Projects.
- The roadway would need to be lowered by approximately 3' to achieve a 15'-0" vertical clearance from the new roadway surface to the retrofitted TPG rail bridge and new prefabricated NMP bridge soffits. To accommodate 3 foot lowering of the roadway, approximately 850' of Old Redwood Highway would need to be reconstructed along with a 400' section of Eastside Road. Furthermore, long stretches of new retaining walls would be needed along both shoulders of the lowered roadway.
- Lowering the roadway would also necessitate reconstructing the entire existing drainage system in Old Redwood Highway including the existing drainage inlet at the low point, existing concrete drainage channel along the south shoulder of the roadway (east side of the bridge), and large concrete box culvert near the existing rail bridge's south abutment. Furthermore, a pump station would likely be needed at the new low point of the roadway since gravity discharge into the existing channel would be unfeasible.
- Lowering the roadway would likely necessitate relocating existing underground Comcast telecom, PG&E gas distribution, and PG&E gas transmission main facilities given that such facilities are approximately 3 to 4 feet below grade.

Current Baseline Scope

CONSULTANT'S current Phase I scope of services through the 65% design phase assumes that the existing rail bridge abutment walls along Old Redwood Highway, including the roadway pavement, would be protected-in-place and that the new TPG rail bridge and NMP bridge abutments would be placed beyond the existing abutment walls to accommodate a future roadway widening project led by the County of Sonoma. The existing track profile would be raised by approximately 3' to achieve 15'-0" of vertical clearance between the existing roadway surface and the new TPG rail bridge and NMP bridge soffits. The current scope assumes that the County of Sonoma may choose to widen the roadway to 48', remove the existing abutment walls, and construct new retaining walls along the new roadway shoulders at a future date.

CONSULTANT'S current scope of services also includes replacing the existing TPG rail bridge with a new 80' long TPG rail bridge designed to accommodate Cooper E80 loading, along with constructing a new 13' wide prefabricated NMP bridge adjacent to the east side of the new TPG rail bridge. Sacrificial fascia beams (HSS 24 x 24 x 1/2) will be placed adjacent to the west side of the new TPG rail bridge and adjacent to the east side of the new NMP bridge to prevent damage to either structure in the event of a vehicle collision.

The new TPG superstructure will consist of two steel through-plate girders approximately 6'-10" deep on each side of the track that would accommodate an 18'-0" wide clearance envelope along with 2' wide CPUC walkways. The TPG bridge's floor beam system will consist of W18 x 119 floor beams with one W12 x 50 diaphragm at the center. Knee braces will be provided on the through plate girders to prevent lateral-torsional buckling of the compression flanges. The new TPG rail bridge substructure will consist of 4'-2" thick cast-in-place, reinforced concrete abutments supported by steel HP piles, along with cast-in place concrete wingwalls at the four corners of the abutments.

CN 001 Scope

Under CN 001, CONSULTANT would produce 35%, 65%, and 100% Roadway Plan & Profile plans, Signage & Striping plans, and Roadway Improvement plans for a widened Old Redwood Highway. CONSULTANT assumes that additional roadway and traffic-related specifications would not be required under CN 001 since the current specifications included in the Phase I scope of services will adequately cover the proposed infrastructure associated with the Old Redwood Highway widening.

CONSULTANT will advance design of the Old Redwood Highway alternative that removes the current "dogleg" and utilizes a long horizontal roadway curve that adheres to current roadway standards consistent with the concept presented to the County of Sonoma on March 13, 2026. The preferred alternative would reconstruct approximately 850 linear feet of Old Redwood Highway and widen it from 24' to 48' to accommodate the County's stated preferred roadway cross section consisting of:

- Two 12' travel lanes
- Two 8' bike lanes (5' bike lanes with 3' buffers)
- Two 2' road shoulders and
- Two 2' curb & gutters

This alternative would maintain the existing location of the shoulder along the south side of Old

Redwood Highway and widen the roadway 24' to the north while maintaining the current roadway profile. A new retaining wall approximately 400' long will be placed along the proposed north shoulder of the road since the existing roadway is in a cut section in the vicinity of the SMART rail bridge.

This alternative would also remove both existing rail bridge abutment walls/wingwalls and construct new abutment walls/wingwalls along the proposed roadway shoulders. The proposed south abutments of the new rail and NMP bridges will be placed near the location of the existing south abutment of the rail bridge, while the proposed north abutments of the new rail and NMP bridges will be placed approximately 24' north of the existing north abutment of the rail bridge.

Consistent with the current Baseline Scope, the existing through plate girder (TPG) rail bridge will be replaced with a new 120.5' long TPG rail bridge designed to accommodate Cooper E80 loading. In addition, a new 140' long, 13' wide prefabricated NMP bridge will be constructed adjacent to the east side of the new TPG rail bridge consistent with the current Baseline Scope. The existing track profile will be raised by approximately 3' to achieve 15'-0" of vertical clearance between the new roadway surface and the new TPG rail bridge and NMP bridge soffits.

Under CN 001, CONSULTANT would also produce 35%, 65%, and 100% Retaining Wall Sections & Details plans and Retaining Wall Plan & Profile plans for the new approximate 400' long retaining wall to be located along the north shoulder of Old Redwood Highway. CONSULTANT assumes that a Caltrans Type 1 retaining wall would be utilized per standard B3-1A of the Caltrans Standard Plans. The retaining wall would be up to 10' high which would yield a 5' wide footing extending from the back of the retaining wall which would extend beyond the existing right-of-way line at the pinch point. CONSULTANT also assumes that additional retaining wall-related specifications would not be required under CN 001 since the current specifications included in the Phase I scope of services will adequately cover the proposed infrastructure associated with the new retaining wall.

Drainage

Existing Conditions

County of Sonoma as-built plans indicate that there is an existing drainage inlet located at the low point of Old Redway Highway that's connected to an 18" CMP which crosses under the road and outfalls into a nearby stream. CONSULTANT could not field locate the inlet and it appears to not be functioning as intended. As a result, localized flooding at the low point of the roadway (directly beneath the existing rail bridge) has been observed during heavy rain events this winter even though the area is not located in a designated floodplain.

There's also a shallow concrete drainage channel located along the south side of Old Redwood Highway behind the existing guardrail (on the east side of the railroad bridge) that transitions into a curved concrete box culvert near the existing rail bridge abutment. A recent survey scan of the curved concrete box culvert concluded that it's in relatively good condition, but that thick vegetation within the channel downstream of the culvert is likely restricting its conveyance capacity and thereby contributing to localized flooding.

Current Baseline Scope

CONSULTANT'S current Phase I scope of services through the 65% design will design a retrofit of the existing drainage inlet (located at the low point of Old Redway Highway) that's connected

to an 18" CMP which crosses under the road and outfalls into a nearby stream. This relatively straightforward fix would help mitigate observed flooding directly underneath the existing SMART rail bridge without additional improvements to the roadway's existing drainage system.

CN 001 Scope

Under CN 001, CONSULTANT would produce a Draft and Final Hydrology Report that analyzes the condition of the existing drainage system and documents required drainage infrastructure improvements to accommodate an additional 10,500 square feet of impermeable roadway surface along with contributing stormwater from adjacent parcels. The Report will include exhibits that delineate adjacent watersheds that currently contribute stormwater onto Old Redwood Highway and include a detailed summary of the rational method calculations used to determine the peak runoff in cubic feet per second (cfs) from each adjacent watershed for a 10-year, 25-year, and 100-year storm event. This detailed summary will include a table of calculated runoff coefficients, time of concentration, and rainfall intensity for each delineated watershed.

Following completion of the peak runoff calculations, CONSULTANT will determine if the following existing drainage features will need to be upsized to accommodate the additional impermeable roadway surface and contributing stormwater from adjacent parcels:

- The existing drainage inlet currently located at the low point of Old Redway Highway would be replaced with a new drainage inlet to be located within the new north shoulder of the roadway at the current low point. The existing concrete ditch located on the north side of the road that outfalls into this existing drainage inlet would be rebuilt and redirected into the new drainage inlet. The existing 18" CMP that connects into this existing drainage inlet currently crosses under the road and outfalls into the nearby stream located just south of the roadway. This CMP would be replaced in its entirety with a larger diameter CMP or extended by approximately 24' to connect into the new drainage inlet if deemed to be sized appropriately.
- The preferred roadway alternative would protect-in-place the existing concrete ditch that runs along the south shoulder of Old Redwood Highway unless it's deemed to be insufficiently sized to accommodate calculated peak runoff. A larger concrete ditch would need to be sized and designed if the existing capacity of the concrete ditch is deemed insufficient.
- This existing curved concrete box culvert, located just south of the existing rail bridge abutment, that conveys storm runoff from the concrete ditch mentioned above would be protected in place unless it's deemed to be insufficiently sized to accommodate calculated peak runoff. A larger curved concrete box culvert would need to be sized and designed if the existing capacity of the concrete box culvert is deemed insufficient.
- The existing 3' x 3' concrete drainage inlet currently located in the north shoulder of Old Redwood Highway, approximately 165' west of the existing rail bridge, would be replaced with a new concrete drainage inlet to be located within the new north shoulder of the roadway. The existing 18" RCP that connects into this existing 3' x 3' concrete drainage inlet currently crosses under the road and outfalls into the nearby stream located just south of the roadway. This RCP would be replaced in its entirety with a larger diameter RCP or extended by approximately 24' to connect into the new concrete drainage inlet if deemed to be sized appropriately.

CONSULTANT would produce 35%, 65%, and 100% Drainage Detail plans and Drainage Plan & Profile plans for new drainage infrastructure associated with the widening of Old Redwood Highway. CONSULTANT assumes that additional drainage-related specifications would not be required under CN 001 since the current specifications included in the Phase I scope of services will adequately cover the proposed drainage infrastructure summarized above.

Utilities

Existing Conditions

An existing utilities base map was prepared during the project's Alignment Phase under CONSULTANT'S current contract based on as-built information received from SMART, County of Sonoma, Sonoma County Water Agency, AT&T, Lumen, Sonic Telecom, Comcast, PG&E, and City of Santa Rosa. CONSULTANT continues to update the existing utilities base file during the 35% design phase to depict more precise locations of existing utilities as informed by Underground Service Alert (USA) field markings combined with supplemental field survey. The project's current existing utilities base file is classified as Quality Level C under ASCE Standard 38-02 *Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data*. The project's potholing early works package is anticipated to commence in May 2026 that will help define more precise locations of known, and possibly unknown, utilities to achieve an existing utilities base map deemed Quality Level A under ASCE 38-02 at the conclusion of the current 35% design phase.

The existing utilities summarized below are located within the limits of the proposed improvements associated with CN 001:

- AT&T
- Comcast
- Lumen California
- Pacific Gas & Electric – Gas Distribution
- Pacific Gas & Electric – Gas Transmission
- Pacific Gas & Electric – Electric Distribution
- Pacific Gas & Electric – Electric Transmission
- City of Santa Rosa – Reclaimed Water
- Sonic Telecom

Current Baseline Scope

CONSULTANT'S current Phase I scope of services through the 65% design phase assumes that there are no impacts to existing underground utilities within Old Redwood Highway since the existing rail bridge abutment walls along Old Redwood Highway, including the roadway pavement, would be protected in place. The new TPG rail bridge and NMP bridge abutments will be placed beyond the existing abutment walls and pose no impact to existing underground utilities running parallel to Old Redwood Highway.

The existing track profile will be raised by approximately 3' to achieve 15'-0" of vertical clearance between the existing roadway surface and the new TPG rail bridge and NMP bridge soffits. The track raise will result in a vertical clearance of 20'-6" from the proposed top of rail to the existing AT&T overhead telecom line located along the south shoulder of the road and thus necessitating relocation of the line to achieve 24'-6" of vertical clearance.

CONSULTANT'S current scope of services also includes replacing the existing through plate girder (TPG) rail bridge that includes an existing AT&T fiber optic line mounted to the bridge. The new 120.5' long TPG rail bridge designed to accommodate Cooper E80 loading will be designed accommodate the relocated AT&T fiber line.

CN 001 Scope

Under CN 001, CONSULTANT would update the Project's existing utilities base file to include all existing public and private utilities located within the proposed footprint of the preferred roadway alternative envisioned to reconstruct approximately 850' linear feet of Old Redwood Highway. The Project's current existing utilities base file includes existing public and private utilities within Old Redwood Highway extending approximately 150' in both directions from the existing rail bridge, and additional utility as-built records will need to be obtained to complete the initial utility base map within the proposed roadway footprint.

Once additional existing utilities are mapped using available as-built documents, CONSULTANT will further update the existing utilities base during the 35% design phase of CN 001 to depict more precise locations of existing utilities within Old Redwood Highway as informed by Underground Service Alert (USA) field markings combined with supplemental field survey. The Project's early works potholing package may also need to be augmented with additional potholes to precisely locate existing utilities that may be impacted by the new 400' retaining wall to be placed along the proposed north shoulder of the roadway. Furthermore, additional potholes may be needed to precisely locate the 18" CMP and 18" RCP storm drain lines that convey drainage from the north side of Old Redwood Highway into the stream located just south of the roadway.

CONSULTANT will produce 35%, 65%, and 100% Utility Conflict plans and Utility Plan & Profile plans for a widened Old Redwood Highway. CONSULTANT assumes that additional utility-related specifications would not be required under CN 001 since the current specifications included in the Phase I scope of services will adequately cover the proposed utility infrastructure summarized above. The plans would also detail the proposed locations of the relocated PG&E gas distribution and transmission lines that currently run along the north side of Old Redwood Highway if they need to be relocated to the new edge of roadway on the north side.

Topographic Mapping and Right of Way

Current Baseline Scope

CONSULTANT'S current Phase I scope of services through the 65% design phase includes development of the Project's right-of-way base file that delineates SMART's existing right-of-way for the Project's entire 9-mile corridor along with the County of Sonoma's existing right-of-way along Old Redwood Highway extending approximately 100' in either direction from the existing rail bridge. CONSULTANT confirmed during the Project's Alignment Phase that the proposed abutments, wing walls, and footings associated with the new TPG rail bridge and NMP bridge fit within SMART's existing right-of-way and that no right-of-way acquisition was required to build the Project's proposed infrastructure in the vicinity of Old Redwood Highway.

CONSULTANT'S current Phase I scope of services through the 65% design phase also includes development of the Project's topographic base map derived from aerial photogrammetry that extends approximately 250' along Old Redwood Highway east of the existing rail bridge, and approximately 450' along Old Redwood Highway west of the rail bridge. In addition, the Project's current surveying scope of services includes supplemental field survey for Old Redwood Highway within the limits of SMART's existing right of way including a sag survey on the overhead PG&E electric and AT&T telecom lines that span across the existing rail bridge.

CN 001 Scope

Under CN 001, CONSULTANT would update the Project's existing right of way base file to include the County of Sonoma's existing right-of-way along the entire 850' length of widened roadway.

At the east end of the proposed widened roadway footprint, the existing right of way is constrained and widening the roadway to the north would place a Caltrans Type 1 retaining wall near the existing right of way line. Based on the conceptual widened roadway layout, it appears that the back face of the proposed retaining wall along the north shoulder of the road would be located within inches of the existing right of way line and that the proposed footing would extend approximately 5' into the adjacent private parcel along an approximate 100' stretch of the roadway.

CONSULTANT assumes that a plat and legal description document would need to be developed to support the partial acquisition of this private parcel as part of CN 001. CONSULTANT also assumes that the County of Sonoma would be responsible for leading all other aspects of the right-of-way acquisition process associated with this partial take of the private parcel to accommodate the widened roadway. During the 35% phase of CN 001, CONSULTANT and SWH will collaborate with SMART and the County of Sonoma to advance a wall type selection process to determine the feasibility of utilizing a soldier pile or sheet pile type retaining wall to eliminate the proposed footing associated with the Caltrans Type 1 retaining wall. CONSULTANT would need to process an amendment to CN 001 if it's later determined that additional support is needed to complete the right-of-way acquisition process beyond just developing the plat and legal description document for the partial private parcel take.

Under CN 001, CONSULTANT would also update the Project's existing topographic base file to extend along the entire 850' length of widened roadway. CONSULTANT assumes that the existing topographic base file would be augmented with additional topographic mapping via aerial photogrammetry captured during the flyover in October 2025.

Schedule

CN 001 will consist of the following phases:

35% Design Level Preliminary Engineering

This phase includes the development and analyses of critical design element alternatives in support of Army Corp and/or CDFW environmental permit applications required for the improvements associated with CN 001. In addition, an environmental effect footprint will be determined based on the preferred design alternative to facilitate required environmental clearance to be completed by SMART's environmental consultant. The CONSULTANT will develop preliminary engineering documents to support the environmental work to be completed by SMART's environmental consultant.

65% Design Level Preliminary Engineering

This phase includes the development of plans and specifications necessary for negotiating the Project's Guaranteed Maximum Price (GMP).

100% Final Design

This phase includes the development of plans and specifications necessary for constructing the proposed improvements to Old Redwood Highway. The retaining wall in CN 001 will be included as an early works package for submission in July 2027 so that it correlates with the rail and NMP bridges design schedule under the current baseline scope of services.

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The detailed Scope of Services (following pages) is based on the following key schedule assumptions:

- Assumed CN 001 Notice to Proceed: Early August 2026
- 35% Design Level Preliminary Engineering (6 Months): Late January 2027
- 65% Design Level Preliminary Engineering (6 Months): Late July 2027
- 100% Design (5 months): Late December 2027 (Early July 2027 for the retaining wall early works package)

Phase I – Project Management and Integration

Task 1 - Project Management and Control

The CONSULTANT's Principal Engineer (Civil/Rail) will work under the direction of the SWH PDBE Deputy PM to deliver the 35% design phase of CN 001 under the current project management budget established for Phase I through November 2026. Task 1 includes 13 months of additional budget to cover all project management-related activities beyond Phase I of the current Project to deliver the 65% and 100% design phases of CN 001.

CONSULTANT'S co-located team members will continue to take direction from CONSULTANT'S Principal Engineer (Civil/Rail), SWH's PDBE Representative (Project Manager), and SWH's PDBE Deputy PM, while the CONSULTANT'S Principal Engineer (Civil/Rail) will continue to manage the day-to-day activities of the other CONSULTANT team members based in their respective home offices.

The CONSULTANT shall provide the following project management activities under Task 1 through the 100% phase of CN 001:

CONSULTANT Activities

1.1 Project Management

CONSULTANT will support SWH in incorporating CN 001 into the project's contract, scope, schedule, budget, and Project Team. CONSULTANT will continue to directly manage and coordinate its staff and subconsultants during the 35% Design Level Preliminary Engineering phase of CN 001 under the current Phase I project management budget. Task 1.1 *Project Management* includes 13 months of additional budget for project management-related activities to deliver the 65% Design Level Preliminary Engineering and 100% Final Design phases under CN

001. SWH will keep SMART informed on all aspects of the development of CN 001 design and deliverables.

1.3 Project Controls

1.3.2 Schedule Management

The following schedule management-related activities associated with the 35% Design Level Preliminary Engineering phase of CN 001 will be covered under the current Phase I schedule management budget.

- **Work Breakdown Structure:** CONSULTANT will support SWH in preparing an updated Work Breakdown Structure (WBS) based on the approved CN 001 scope of work. These elements will be incorporated into the project schedule and the participation and level of effort for SWH and CONSULTANT will be clearly defined.
- **Critical Path Method Schedule:** CONSULTANT will support SWH in preparing an updated Critical Path Method (CPM) project schedule that provides a detailed sequence of all activities required to complete the scope of services under CN 001 within the contract duration, using the WBS specified in the updated detailed work plan. The project schedule will include all known constraints, task dependencies (logic), deliverables, SMART reviews, third-party reviews, quality assurance/quality control (QA/QC) reviews, and applicable deliverables and milestones associated with CN 001. SMART will identify critical design milestones for CN 001 that SWH must include in the updated schedule. The schedule will distinguish the critical path from other non-critical activities.
- **Updated Baseline Schedule:** SWH will submit the updated baseline schedule to SMART in an electronic format compatible with Primavera P6 within 21 calendar days of the CN 001 NTP. SMART will review and comment on the updated baseline schedule within ten (10) calendar days of receipt. CONSULTANT will support SWH to incorporate review comments and resubmit the updated schedule as part of the updated Project Management Plan.

Task 1.3.2 Schedule Management includes 13 months of additional budget for schedule management-related activities to deliver the 65% Design Level Preliminary Engineering and 100% Final Design phases under CN 001. Specifically, additional budget is needed to:

- Assist SWH in evaluating current schedule performance relative to the updated approved baseline schedule to show current performance.
- Continue supporting SWH to update the schedule each month to indicate actual start and finish dates, remaining project duration, and percentage of work completed.

1.5 Invoicing, Contract Administration, Reporting, and CPM

CONSULTANT will establish, maintain, and administer updated agreements with its subconsultants for the inclusion of CN 001.

The current Task 1.5 budget established for Phase I of the Project will cover all invoicing-related activities through the 35% Design Level Preliminary Engineering phase of CN 001. However, the task's current budget will need to be augmented with 13 months of additional budget to cover all invoicing-related activities during the 65% Design Level Preliminary Engineering and 100% Final Design phases of CN 001 consistent with the current Phase 1 scope of services.

CONSULTANT continues to assume that SWH will submit CONSULTANT'S invoices no later than thirty (30) days from the date the services/charges were incurred by CONSULTANT.

CONSULTANT continues to assume that SMART will pay SWH within 30 days following submission of an invoice and that SWH will pay CONSULTANT no later than thirty (30) days from receipt of payment by SMART. CONSULTANT also continues to assume that there will be no retention of CONSULTANT'S payment unless SMART imposes payment retention on SWH.

1.7 Design Quality Assurance/Quality Control

CONSULTANT's Design Quality Control (QC) Manager will continue to enforce the project's Design Quality Assurance/Quality Control (QA/QC) standards and procedures for all deliverables associated with CN 001. CONSULTANT will submit an updated Design Quality Management Plan (QMP) within 30 days of NTP in accordance with SMART's QMP requirements that will include an updated list of formal submittals associated with CN 001 to SMART.

The Design QMP dictates procedures for the CONSULTANT to confirm that all contract documents associated with CN 001 have been checked and comply with SMART's Design Criteria. The QC Manager will notify the CONSULTANT's Principal Engineer that the Design Submittal Checklist and Certification form can be signed and submitted to SMART prior to the 35%, 65%, and 100% design milestone submittals for CN 001. The QC Manager will maintain a running list of observed deficiencies, discrepancies, and non-compliances, and deploy corrective actions prior to each design milestone submittal.

1.8 Electronic File Management

CONSULTANT will continue to furnish a CADD Manager to ensure that all electronic files associated with CN 001 adhere to the SMART Drawing Standards across all design disciplines so that the team can more efficiently advance the design through all submittal milestones. CONSULTANT'S CADD Manager will also continue to be responsible for maintaining file security by limiting access to only active Project Staff by maintaining a log of usernames assigned to each team member. In addition, CONSULTANT'S CADD Manager will continue to be responsible for maintaining the Project folder structure on BIM360 and for uploading all updated files into the BIM360 folders by 5:00 PM Pacific every Friday afternoon.

Task 1 Deliverables

- Task 1.3 Project Controls
 - Input into the Summary of Hours and Dollars spreadsheet for design-related tasks in CONSULTANT'S CN 001 scope of services for the 65% Design Level Preliminary Engineering, and 100% Final Design phases under CN 001
 - Input into the revised CPM schedule for design-related work elements in CONSULTANT'S CN 001 scope of services for the 65% Design Level Preliminary Engineering, and 100% Final Design phases under CN 001
- Task 1.5 Invoicing, Contract Administration, Reporting and CPM
 - Invoices for progress payments at submittal milestones, due to SMART Accounts Payable in accordance with Section 18.01 of the Phase I Agreement for the 65% Design Level Preliminary Engineering, and 100% Final Design phases under CN 001
- Task 1.7 Quality Assurance/Quality Control
 - Updated Design Quality Management Plan
 - Updated design Submittal Checklist and Certification Forms at milestone submittals

- Task 1.8 Electronic File Management
 - All electronic CADD and digital terrain model data and related files used in the production of the CN 001 contract drawings

Task 1 Key Understandings

- Task 1.1 Project Management
 - Task 1.1 Project Management includes 13 months of additional budget for project management-related activities to deliver the 65% Design Level Preliminary Engineering, and 100% Final Design phases under CN 001
- Task 1.3 Project Controls
 - Task 1.3.2 Schedule Management includes 13 months of additional budget for schedule management-related activities to deliver the 65% Design Level Preliminary Engineering, and 100% Final Design phases under CN 001
- Task 1.5 Invoicing, Contract Administration, Reporting and CPM
 - Task 1.5's current budget will need to be augmented with 13 months of additional budget to cover all invoicing-related activities during the 65% Design Level Preliminary Engineering, and 100% Final Design phases of CN 001
- Task 1.7 Quality Assurance/Quality Control
 - None
- Task 1.8 Electronic File Management
 - None

Task 2 – Design and Project Integration

This task involves design and project integration and interface management services as a part of the scope of work for CN 001. CONSULTANT will continue to support SWH in coordinating with authorities having jurisdiction (AHJs) as specified in the subtasks below to develop consensus on a design that will be accepted by the AHJs, as well as other consultants or parties engaged formally or informally by SMART. The scope of these services generally includes the following:

CONSULTANT Activities

2.2 Design Review and Agency Coordination

The CONSULTANT shall assist SWH in coordinating with Authorities Having Jurisdiction (AHJs) such as the County of Sonoma, utility providers (public and private), and private property owners to deliver the scope of services associated with CN 001. CONSULTANT's management and engineering staff shall continue to attend formal and informal design review meetings with SMART and other consultants and agencies. The CONSULTANT's preparation and attendance at such meetings shall be considered an ongoing design function to perform the specified scope of services.

SWH shall continue to produce meeting notes for internal and external contract coordination and shall continue to maintain action item/interface lists to facilitate resolution of third-party issues associated with CN 001. CONSULTANT shall review and provide input into the meeting notes and action items/interface lists specific to CN 001. These meetings shall be anticipated by the CONSULTANT and shall be included in the scope of services as follows:

2.2.3 County of Sonoma Coordination

CONSULTANT will assist SWH in coordinating with the County of Sonoma to comply with its specific design review process. CONSULTANT will participate in formal and informal design review meetings with County of Sonoma staff as facilitated by SWH to secure over-the-shoulder reviews and formal review comments on the CN 001 35%, 65%, and 100% PS&E documents.

For improvements outside of SMART's right-of-way, CONSULTANT assumes that the design of such improvements will need to adhere to the County of Sonoma Department of Transportation and Public Works Construction Standards published on the Sonoma County Public Infrastructure website.

The CONSULTANT shall also be responsible for coordinating its design and managing the integration of its work with the planning, design, and construction work by other project consultants and contractors for all known County of Sonoma projects that may interface with the Old Redwood Highway widening design features.

The CONSULTANT shall coordinate with SMART and/or SWH permit staff by providing the documents, drawings, information, and support necessary for the development and preparation of required permits, including key land use and construction permit applications with the County of Sonoma. CONSULTANT will support SWA in coordination efforts with the County of Sonoma up to a budgeted level of effort included in this task in the negotiated fee breakdown. Hours spent on this task will be tracked and reported monthly, and efforts beyond this level of effort will be negotiated and paid for separately.

2.2.4 Public and Private Utilities Coordination

CONSULTANT will support SWH in coordinating with public and private owners to secure additional utility mapping for Old Redwood Highway and Eastside Road to accommodate the Old Redwood Highway widening. Specifically, CONSULTANT will:

- Obtain utility record drawings to establish the positive location of all utilities that may be affected by the Old Redwood Highway widening.
- Identify and document potential conflicts between all existing utilities and proposed improvements associated with the Old Redwood Highway widening. If CONSULTANT demonstrates through design documentation that relocation cannot be avoided, CONSULTANT shall develop required pothole information for every utility identified in a "Utility Relocation Request" to be submitted to SMART for approval.
- Establish the limits of utilities to be demolished or abandoned along with the locations of all relocated utilities.

CONSULTANT will support SWA on coordination efforts with public and private utility owners up to a budgeted level of effort included in this task in the negotiated fee breakdown.

Task 2.2 Key Understandings

- SWH will continue to produce meeting notes and maintain action item/interface lists for all meetings included in Task 2.2 for review and input by the CONSULTANT.
- CONSULTANT will support coordination efforts with the AHJs listed under Task 2.2 up to the stated budgeted level of effort.

- CONSULTANT assumes that SWH will provide all private utility owners known to have facilities in the Old Redwood Highway right-of-way with plan sets or exhibits for them to confirm that their facilities are indeed impacted by the roadway widening and, if so, to initiate the relocation design. CONSULTANT has not included budget to design the relocation of private utilities such as gas, fiber/comm, and electrical/power that may conflict with the proposed infrastructure associated with CN 001.
- CONSULTANT assumes that SWH will continue to be responsible for leading all coordination efforts with utility owners to determine the following:
 - Utility relocation strategies and schedules
 - Franchise and permit process
 - Verification of utility property rights
 - Responsibility for utility relocation costs

Task 2.2 Deliverables

- Input into the Weekly Technical Task Force Meetings meeting notes and action items/interface lists specific to CN 001.
- Input into the Agency Coordination Meetings meeting notes and action items/interface lists for all subtasks under Task 2.2 specific to CN 001.

2.3 Environmental Consultant Coordination

For purposes of the project's environmental clearance effort, CONSULTANT will support SMART's environmental consultant in the preparation of CEQA and NEPA documents to evaluate the inclusion of the Old Redwood Highway widening into the project's scope of services. CONSULTANT will support SWA on coordination efforts with SMART's environmental consultant up to a budgeted level of effort included in this task in the negotiated CN 001 fee breakdown.

2.3.1 Project Description and Impact Footprint Support

CONSULTANT will assist SMART's environmental consultant in preparing an updated project description and impact footprint that will serve as a basis of analysis for the environmental clearance and regulatory permitting process. The updated project description and footprint will be based on the preliminary engineering drawings and constructability analysis (e.g., temporary construction access and staging areas). SMART's environmental consultant will be in responsible charge of preparing the updated project description, and CONSULTANT will assist in the preparation of supporting graphics and figures including, but not limited to, the temporary and permanent impact footprint as directed by SMART's Project Manager.

CONSULTANT's staff will continue to coordinate proactively with SMART's environmental consultant to ensure that an accurate updated project description and footprint are developed in a timely manner to meet project schedule needs. CONSULTANT can directly prepare or edit portions of the updated project description and/or footprint to allow SMART to select different roadway configurations as information from the County of Sonoma becomes available.

SMART's environmental consultant will be responsible for submitting a draft updated project description and impact footprint to SMART for review and comment. Based on comments from

SMART, the project description will be finalized by SMART's environmental consultant with support from CONSULTANT as requested by SMART's Project Manager. SMART's environmental consultant will move forward with the preparation of updated technical studies upon completion of the Project Description and Impact Footprint.

Task 2.3.1 Key Understandings

- CONSULTANT will support SWA on coordination efforts with SMART's environmental consultant up to a budgeted level of effort included in this task in the negotiated CN 001 fee breakdown.
- CONSULTANT'S environmental scope under Task 2.3.1 is limited to ongoing participation at coordination meetings with SMART's environmental consultant and the preparation of supporting graphics and figures for inclusion in the updated project description and impact footprint.

Task 2.3.1 Deliverables

- Supporting graphics and figures for the updated Draft and Final Project Description
- Draft and final impact footprints (temporary and permanent)

Task 2 Deliverables

- Task 2.2 Design Review and Agency Coordination
 - Input into the Agency Coordination Meetings meeting notes and action items/interface lists for all subtasks under Task 2.2 specific to CN 001
 - Supporting documents, drawings, and information for permits, and concurrence letters specific to CN 001
 - Design Review presentations at the 35%, 65%, and 100% design milestones that incorporate the Old Redwood Highway widening scope of services included in CN 001
- Task 2.3 Environmental Consultant Coordination
 - Supporting graphics and figures for the updated Draft and Final Project Description
 - Draft and final impact footprints (temporary and permanent)

Task 2 Key Understandings

- Task 2.2 Design Review and Agency Coordination:
 - CONSULTANT assumes that SWH will provide all utility owners known to have facilities in the Old Redwood Highway right-of-way with plan sets or exhibits for them to confirm that their facilities are indeed impacted by the roadway widening and, if so, to initiate the relocation design.
 - CONSULTANT assumes that SWH will continue to be responsible for leading all coordination efforts with utility owners to determine the following:
 - Utility relocation strategies and schedules
 - Franchise and permit process
 - Verification of utility property rights

- Responsibility for utility relocation costs
- Task 2.3 Environmental Consultant Coordination
 - SMART's environmental consultant will be responsible for developing the following environmental deliverables as required by the appropriate level of CEQA/NEPA documentation:
 - Updated Draft and Final Project Description
 - Updated Draft and Final Impact Footprint

Phase I – 35% Design Level Preliminary Engineering

Task 4 – Initial Engineering and Technical Studies

This task involves producing additional topographic mapping and existing right of way evaluation to support the 35%, 65%, and 100% design phases of the Old Redwood Highway widening scope of services included in CN 001.

CONSULTANT Activities

4.1 Field Survey and Mapping

The Project's existing topographic base file will be updated to extend along the entire 850' length of widened roadway. CONSULTANT assumes that the existing topographic base file developed under the current Phase I contract would be augmented with topographic mapping via aerial photogrammetry captured during the flyover in October 2025. All additional supplemental field survey will be merged with the aerial topographic mapping developed under CN 001.

The supplemental field survey will include features such as, but not limited to, edge of pavement, AC dikes, drainage inlets, concrete drainage ditches, utility markings on the pavement, overhead utility poles, retaining walls, and any other pertinent information that could apply to CN 001 during design.

Mapping along the widened roadway will extend 10 feet beyond the edge of pavement on each side of the roadway as access is allowed, and mapping along East Side Road will extend 500 feet south of the intersection with Old Redwood Highway.

Task 4.1 Deliverables

- Supplemental field surveys will be collected and merged with new topographic mapping tiles developed under CN 001. A PDF of the supplemental field survey will be provided to outline the extent of the detailed survey specific to the Old Redwood Highway widening.
- Updated existing topographic base file that extends along the entire length of widened roadway.

Task 4.1 Key Understandings

- Base mapping and DTMs will be owned by SMART

4.2 Preliminary Geotechnical Evaluation

CONSULTANT will determine the R-value needed to design the proposed roadway pavement section of Old Redwood Highway by utilizing soil characteristics to be obtained from the proposed geotechnical boring near the existing rail bridge to be conducted under the current Phase I contract.

Task 4.2 Deliverables

- Addition of a proposed roadway pavement section for Old Redwood Highway to be added to the Preliminary Geotechnical Design Report.

Task 4.2 Key Understandings

- The geotechnical boring to be conducted near the existing rail bridge at Old Redwood Highway can be used to determine the R-value needed to design the proposed roadway pavement section. This would eliminate the need to conduct an additional geotechnical boring within the existing pavement of Old Redwood Highway.

4.4 Right-of-Way Evaluation

CONSULTANT will conduct an inventory of the parcels and utility easements in the vicinity of a widened Old Redwood Highway under CN 001. The inventory will include research on right-of-way record maps, County of Sonoma APN maps, and affected roadway boundaries. The search will include:

- Obtaining additional existing right-of-way maps and record maps
- Obtaining additional deeds and maps if available for likely affected easements
- Obtaining additional available county mapping along the affected Project footprint for use in right-of-way and parcel boundary resolution
- Obtaining additional utility maps to verify utility easements

Additional obtained record information will be included in the existing right of way base file developed under Task 4.1 of the current Phase I contract, and a preliminary evaluation of likely right-of-way impacts will be included in the Right-of-Way Evaluation Matrix summarizing key property issues.

Task 4.4 Deliverables

- Updated Right-of-Way Evaluation Matrix summarizing key property issues which could affect project design elements included in CN 001.
- Updated topographic base mapping that includes existing right-of-way linework (AutoCAD dwg).

Task 4.4 Key Understandings

- At locations where proposed infrastructure is close to County of Sonoma right-of-way, the CONSULTANT shall determine the actual right-of-way to verify that work does not extend outside County of Sonoma right-of-way.
- Based on the conceptual widened roadway layout, it appears that the back face of the proposed retaining wall along the north shoulder of the widened road would be located within inches of the existing right of way line and that the proposed footing of a Caltrans Type 1 retaining wall would extend approximately 5' into the adjacent private parcel along an approximate 100' stretch of the roadway.

Task 4 Deliverables

- Task 4.1 Field Surveying and Mapping
 - Supplemental field survey data for Old Redwood Highway in AutoCAD 2018

format

- Updated Digital Terrain Model (DTM)
- Task 4.2 Geotechnical Evaluation
 - Addition of a roadway pavement section to the Preliminary Geotechnical Design Report
- Task 4.4 Right-of-Way Evaluation
 - Updated Right-of-Way Evaluation Matrix
 - Updated Right-of-Way mapping including affected parcels
 - Updated Record of Survey in hardcopy and PDF format

Task 4 Key Understandings

- Task 4 General
 - SMART acquired the NCRA railroad & right-of-way in fee between the Sonoma-Mendocino County border and Healdsburg in 2021 and became the freight operator of the line. There is no active freight service within the project limits and, therefore, flagging is not required to accommodate the field work included in Task 4.
- Task 4.1 Field Surveying and Mapping
 - CONSULTANT doesn't have the right to rely on the existing topographic base mapping AutoCAD file included in Attachment F Reference Documents of the RFQ and, therefore, will need to develop new topographic base mapping.
 - CONSULTANT assumes that the existing topographic base file developed under the current Phase I contract would be augmented with topographic mapping via aerial photogrammetry captured during the flyover in October 2025.
- Task 4.2 Geotechnical Evaluation
 - CONSULTANT will determine the R-value needed to design the proposed roadway pavement section of Old Redwood Highway by utilizing soil characteristics to be obtained from the proposed geotechnical boring near the existing rail bridge to be conducted under the current Phase I contract.
- Task 4.4 Right-of-Way Evaluation
 - CONSULTANT will not be responsible for resolving legacy NCRA lease agreements and encroachments in the railroad right-of-way that conflict with proposed infrastructure.
 - Based on the conceptual widened roadway layout, it appears that the back face of the proposed retaining wall along the north shoulder of the widened road would be located within inches of the existing right of way line and that the proposed footing of a Caltrans Type 1 retaining wall would extend approximately 5' into the adjacent private parcel along an approximate 100' stretch of the roadway.

Task 7 – Preliminary Engineering

The 35% level preliminary engineering plans for the Old Redwood Highway widening will be prepared based on the preferred roadway alternative presented to the County of Sonoma on March

13, 2026. The plans will be structured and formatted in accordance with the SMART CADD Manual and the Reference Drawings included in the RFQ solicitation which include select details from SMART's most recent extension project. If required, portions of the 35% level preliminary engineering plans will be formatted in accordance with County of Sonoma requirements for project elements within the County's right-of-way.

CONSULTANT assumes that the 35% design milestone submittal will be subject to the County of Sonoma formal design review process.

CONSULTANT Activities

7.3 Bridge, Retaining Wall, and NMP Bridge Plans

CONSULTANT will prepare a 35% retaining wall design for Old Redwood Highway based on the desired roadway typical section defined in the CN 001 scope of services.

Retaining Walls

CONSULTANT will prepare 35% Design Level Retaining Wall Plans for all retaining walls required to achieve the desired roadway typical section defined in the CN 001 scope of services. Typical sections/details for each retaining wall system will be shown on separate plan sheets.

Task 7.3 Deliverables

- 35% Retaining Wall Plans for the Old Redwood Highway widening: 4 Sheets

Task 7.3 Key Understandings

- A retaining wall design will be prepared to accommodate the 48' typical roadway cross section described in Task 7.5.
- CONSULTANT assumes that a Caltrans Type 1 retaining wall up to 10' in height would be placed along the north shoulder of the road that includes a 5' wide footing extending approximately 5' beyond the back face of the wall.
- During the 35% phase of CN 001, CONSULTANT and SWH will collaborate with SMART and the County of Sonoma to advance a wall type selection process to determine the feasibility of utilizing a soldier pile or sheet pile type retaining wall to eliminate the proposed footing associated with the Caltrans Type 1 retaining wall.

7.5 Roadway and Traffic Plans

CONSULTANT will develop 35% Design Level Roadway Plans and Signing & Striping Plans for Old Redwood Highway and Eastside Road based on the desired roadway typical section defined in the CN 001 scope of services.

Roadway Plans

CONSULTANT will develop 35% Design Level Roadway Plans for Old Redwood Highway and Eastside Road that will depict existing right-of-way boundaries (as determined in Task 4.4), topographic mapping (developed under Task 4.1), proposed traffic striping, proposed face of curb for roadway curb & gutter, and approximate limits of new roadway pavement. The roadway layout shall be designed to comply with recommended practices of the most current edition of the following as of Phase I NTP in early October 2025:

- Americans with Disabilities Act Accessibilities Guidelines (ADAAG) guidelines

- MUTCD (Manual of Uniform Traffic Control Devices)
- County of Sonoma Construction Standards
- AASHTO A Policy on Geometric Design of Highways and Streets, 6th Edition (“Green Book”)
- Caltrans Highway Design Manual, Current Edition.
- Pavement design to follow Caltrans HDM Empirical Method with inputs for subgrade provided by geotechnical investigation and traffic loading per County provided traffic count information.

Signing and Striping Plans

CONSULTANT will develop 35% Design Level Signing and Striping plans for Old Redwood Highway and Eastside Road that will detail proposed signing and striping improvements along with a signage inventory.

Task 7.5 Deliverables

- 35% Roadway Plans for the Old Redwood Highway widening: 4 Sheets
- 35% Signing and Striping Plans for the Old Redwood Highway widening: 4 Sheets

Task 7.5 Key Understanding

- Old Redwood Highway will be widened to 48’ consisting of the following features:
 - Two 12’ travel lanes
 - Two 8’ bike lanes (5’ bike lane with a 3’ buffer)
 - Two 2’ road shoulders
 - Two 2’ drainage gutters and/or curbs
- A minimum vertical clearance of 15’ between the new railroad bridge & NMP soffits and existing roadway surface will be achieved by raising the track profile by approximately 3’ in the vicinity of Old Redwood Highway. It is understood that lowering the roadway profile will not be necessary to obtain 15’ clearance.
- The new Old Redwood Highway horizontal alignment will be widened to the north to remove existing deficiencies with the existing alignment, including a new horizontal curve on approach to the bridge crossing. The roadway vertical profile will match the current roadway profile, and the existing posted speed limit will be maintained and utilized in design. Modifications to the intersection of Old Redwood Highway and Eastside Road will be required, but existing traffic control is assumed to be retained with the design (all-way stop controlled with enhanced conspicuity using stop beacons).
- Stage Construction and Traffic Handling plans will not be developed under CN 001.

7.6 Hydrologic and Hydraulic Evaluations

Roadway Drainage

CONSULTANT will prepare a Preliminary Drainage Report specific to the Old Redwood Highway widening scope of services included in CN 001 to analyze the existing drainage conditions and to identify and discuss impacts from Project development on local hydrology and

hydraulics in support of engineering design related to the Local Drainage Plans developed under Task 7.9 below. CONSULTANT will investigate the project impacts on general hydraulic performance of existing and proposed facilities. A site visit will be completed by CONSULTANT to identify drainage patterns and areas of concern that currently lead to recurring observed flooding issues.

Preliminary hydrologic calculations will be completed for existing and proposed conditions to identify overall changes in Project runoff. Preliminary hydrologic analysis of the existing and proposed Project Site will be completed in accordance with the Sonoma County Water Agency Flood Control Design Criteria. It is anticipated that the 25-, 50-, and 100-year storm discharges will be calculated for the associated onsite drainage basins. No offsite basin hydrology calculations will be completed as part of this task.

CONSULTANT will calculate the design flow rates for all stormwater conveyance facilities using the SCS Unit Hydrograph Method for tributary areas over 100 acres, and the Rational Method or SCS Unit Hydrograph Method for tributary areas 100 acres or less. Precipitation, intensity, and duration data shall be based on the data from NOAA Atlas II Volume X-1 (SCS Method) and Sonoma County Water Agency. Stormwater flow control facilities and flow rate-based water quality treatment BMPs (if required) will be designed in accordance with the Stormwater Data Report being developed under the current Phase I contract.

Preliminary detention alternatives will be discussed should the reduction of proposed conditions runoff be required. The Preliminary Drainage Report will summarize the analyses including hydrologic model printouts, hydraulic model printouts, drainage exhibits, climatic conditions, site permeability, existing vegetation, discussion of analyses methodology, and discussion of results.

Task 7.6 Key Understandings

- It appears that the existing drainage system capacity is limited and the scope of this effort will be focused on improving the drainage system within the project footprint which may not resolve all the regional drainage problems in this area.
- Storm drain hydraulic calculations will consist of normal depth methods or HEC-RAS 5.0 calculations.
- Hydrologic analyses will be limited to the rational method, modified rational method, and unit hydrograph method.
- Hydrology calculations will be completed for onsite drainage basins; offsite basins are not included in the analysis.
- Study will not include any groundwater engineering.
- Study will include qualitative discussion of detention if required.
- Study will not include a Water Quality Management Plan (WQMP).

Task 7.6 Deliverables

- Preliminary and Final Drainage Report for the Old Redwood Highway widening to analyze the existing drainage system and proposed drainage improvements to reduce recurring flooding issues, as feasible, and to prevent stormwater from ponding on the roadway from the creek outfall to the roadway surface.

7.9 Local Drainage Plans

CONSULTANT will prepare 35% drainage plans to locate and size facilities associated with the Old Redwood Highway widening based on the calculations included in the Preliminary Drainage Report developed under Task 7.6 *Hydrologic and Hydraulic Evaluations* above. The 35% local drainage plans will detail locations of new roadway catch basins, curb inlets, concrete drainage ditches, concrete drainage culverts, manholes, and storm drain pipes in Old Redwood Highway.

CONSULTANT will coordinate with the County of Sonoma on the design of all storm drain systems located within their right-of-way at Weekly Design Progress Meetings and at Weekly Technical Task Force Meetings. CONSULTANT will design the roadway storm drain system so that water does not drain onto adjoining properties.

Task 7.9 Deliverables

- 35% Local Drainage Plans for the Old Redwood Highway widening: 4 Sheets

Task 7.9 Key Understandings

- The key understandings cited in Task 7.6 *Hydrologic and Hydraulic Evaluations* also apply to Task 7.9

7.10 Utility Plans

CONSULTANT will prepare 35% Utility Plans for all impacted private gas, electric power, communications systems, and overhead utilities associated with the Old Redwood Highway widening.

Existing utility base mapping developed under Task 4.5 *Utility Evaluation* of the current Phase I contract will serve as the basis of the existing utility composite map for use in CN 001, and the Old Redwood Highway Grade Separation White Paper developed under the current Phase I contract will serve as the basis of impacted utilities. CONSULTANT will graphically depict the proposed locations of utilities that likely need to be relocated and encased consistent with the requirements stipulated in Section C *Utilities* of the SMART Design Criteria Manual as summarized in Task 5.7 of the current Phase I contract.

The 35% Utility Plans will help define the utility potholing program to be developed under Task 7.15 *Utility Potholing* of the current Phase I contract. CONSULTANT will update the extents and locations of existing utilities to be relocated as part of CN 001 as informed by the potholing program.

CONSULTANT will continue to support SWH in collaborating with SMART, the County of Sonoma, and private utility owners during the 35% Design Level Preliminary Engineering Phase at Weekly Technical Task Force Meetings under Task 2.1 and at Weekly Design Progress Meetings under Task 1.6 of the current Phase I contract to define the extent of utility relocations located in their jurisdictional right-of-way to be carried into the 65% Preliminary Phase.

Task 7.10 Deliverables

- 35% Utility Plans for the Old Redwood Highway widening: 4 Sheets

Task 7.10 Key Understandings

- CONSULTANT assumes that SWH will continue to provide all utility owners known to have facilities in the Old Redwood Highway right-of-way with plan sets or exhibits for

them to confirm that their facilities are indeed impacted by the Project and, if so, to initiate the relocation design.

- CONSULTANT assumes that SWH will continue to be responsible for leading all coordination efforts with utility owners to determine the following:
 - Utility relocation strategies and schedules
 - Franchise and permit process
 - Verification of utility property rights
 - Responsibility for utility relocation costs

Task 7 Deliverables

- Task 7.3 Bridge, Retaining Wall, and NMP Bridge Plans
 - 35% Retaining Wall Plans for the Old Redwood Highway widening
- Task 7.5 Roadway and Traffic Plans
 - 35% Roadway Plans for the Old Redwood Highway widening
 - 35% Signing and Striping Plans for the Old Redwood Highway widening
- Task 7.6 Hydrologic and Hydraulic Evaluations
 - Preliminary Drainage Report specific to the Old Redwood Highway widening
- Task 7.9 Local Drainage Plans
 - 35% Local Drainage Plans for the Old Redwood Highway widening
- Task 7.10 Utility Plans
 - 35% Utility Plans for the Old Redwood Highway widening

Task 7 Key Understandings

- Task 7.3 Bridge, Retaining Wall, and NMP Bridge Plans
 - Within the SMART right-of-way and beyond the new bridge abutments, a retaining wall design will be prepared to accommodate the 48' typical roadway cross section described in Task 7.5.
- Task 7.5 Roadway and Traffic Plans
 - Old Redwood Highway will be widened to 48' consisting of the following features:
 - Two 12' travel lanes
 - Two 8' bike lanes (5' bike lane with a 3' buffer)
 - Two 2' road shoulders
 - Two 2' drainage gutters and/or curbs
 - A minimum vertical clearance of 15' between the new railroad and NMP bridge soffits and the existing roadway surface will be achieved by raising the track profile by approximately 3' in the vicinity of Old Redwood Highway. It is understood that lowering the roadway profile will not be necessary to obtain 15' clearance.
 - The existing Old Redwood Highway roadway profile will match existing (remain

“as-is”) which may necessitate design criteria waiver(s) from the County of Sonoma.

- The full widened road section of 48-feet will extend along an 850’ stretch of Old Redwood Highway. CONSULTANT assumes that the existing intersection of Old Redwood Highway and Eastside Road will need to be redesigned to accommodate the transition taper.
- Stage Construction and Traffic Handling plans will not be developed under CN 001.
- Task 7.6 Hydrologic and Hydraulic Evaluations
 - It appears that the existing drainage system capacity is limited and the scope of this effort will be focused on improving the drainage system within the project footprint which may not resolve all the regional drainage problems in this area.
 - Storm drain hydraulic calculations will consist of normal depth methods or HEC-RAS 5.0 calculations.
 - Hydrologic analyses will be limited to the rational method, modified rational method, and unit hydrograph method.
 - Hydrology calculations will be completed for onsite drainage basins; offsite basins are not included in the analysis.
 - Study will not include any groundwater engineering.
 - Study will include qualitative discussion of detention if required.
 - Study will not include a Water Quality Management Plan (WQMP).
- Task 7.9 Local Drainage Plans
 - The key understandings cited in Task 7.6 Hydrologic and Hydraulic Evaluations also apply to Task 7.9
- Task 7.10 Utility Plans
 - CONSULTANT assumes that SWH will continue to provide all utility owners known to have facilities in the Old Redwood Highway right-of-way with plan sets or exhibits for them to confirm that their facilities are indeed impacted by the Project and, if so, to initiate the relocation design.
 - CONSULTANT assumes that SWH will continue to be responsible for leading all coordination efforts with utility owners to determine the following:
 - Utility relocation strategies and schedules
 - Franchise and permit process
 - Verification of utility property rights
 - Responsibility for utility relocation costs

Phase I – 65% Design Level Preliminary Engineering

Task 8 – 65% Design

CONSULTANT will prepare 65% Design Level engineering plans and specifications associated

with the Old Redwood Highway widening scope of services under CN 001 that are structured and formatted in accordance with the SMART CADD Manual. Upon submission of the 35% Design Level Preliminary Engineering Plans and Specifications to SMART and the County of Sonoma, CONSULTANT will initiate the 65% Design Level Preliminary Engineering phase to expedite the CN 001 design schedule. CONSULTANT will prepare responses to all review comments received from SMART and project stakeholders on the 35% design submittal milestone related to CONSULTANT'S CN 001 scope of services and participate in subsequent comment resolution meetings to reach final consensus on the dispositions of all review comments. All agreed upon review comments will be incorporated into the Old Redwood Highway widening plans and specifications by the CONSULTANT in parallel with the CN 001 65% design development process.

CONSULTANT assumes that the 65% design milestone submittal will be subject to the County of Sonoma formal design review process.

CONSULTANT Activities

8.6 Civil/Roadway and Traffic Plans

CONSULTANT will prepare 65% Roadway, Roadway Typical Sections, Roadway Details, and Signing & Striping Plans specific to the CN 001 scope of services. Given the compressed schedule of the CN 001 65% design phase, CONSULTANT will secure over-the-shoulder reviews from County staff at Weekly Design Progress Meetings and at Weekly Technical Task Force Meetings as budgeted under Task 2.2.3 above.

Roadway Plans

CONSULTANT will prepare 65% Roadway Plans that incorporate SMART and County of Sonoma review comments on the 35% submittal. The plans will include the features and information defined under Task 7.5 in addition to the following design features:

- Horizontal Curve Data: Horizontal curve data that includes the following information for each intersection curb return: delta, radius, tangent, and length.
- Roadway Grading: Horizontal coordinates (northings/eastings) and elevations along the flowline of the roadway curb and gutter at all tie-in points to the existing roadway curb and at all grade breaks. Proposed 1' contours will also be shown within the reconstructed portions of Old Redwood Highway to indicate the flow of stormwater to new and existing curb inlets. CONSULTANT assumes that such roadway grading information will be included in separate sheets for ease of reference.

Signing and Striping Plans

CONSULTANT will prepare 65% Signing and Striping Plans for Old Redwood Highway that incorporate SMART and the County of Sonoma review comments on the 35% submittal. The plans will include the features and information defined under Task 7.5 in addition to completing the following design objectives:

- Roadway signage layout completed
- Existing roadway signage to be reused and relocated determined
- Any conflicts between proposed roadway signage and illumination, drainage, and/or utilities resolved

Roadway Typical Sections

CONSULTANT will prepare 65% Roadway Typical Sections for Old Redwood Highway that convey dimensions for all travel lanes, bike lanes, and shoulders. The sections will also detail proposed roadway cross slopes, pavement depths, existing right-of-way, and proposed right-of-way. Up to three (3) typical sections will be developed for Old Redwood Highway to be added to one typical section plan sheet.

Roadway Details and Pavement Sections

CONSULTANT will develop roadway details for standard curb and gutter, sidewalks, expansion joints, and inlets as applicable. CONSULTANT assumes that these standard details will adhere to County of Sonoma Department of Transportation and Public Works standards which can be directly referenced in the Roadway Details without having to recreate them in CADD. CONSULTANT will also develop draft roadway sections depicting material depths informed by the R-value derived from the geotechnical boring included in the current Phase I contract.

Task 8.6 Deliverables

- 65% Roadway Plans for the Old Redwood Highway widening: 4 sheets
- 65% Roadway Typical Sections for the Old Redwood Highway widening: 1 sheet
- 65% Roadway Details and Pavement Sections for the Old Redwood Highway widening: 2 sheets
- 65% Signing and Striping Plans for the Old Redwood Highway widening: 4 sheets

Task 8.6 Key Understandings

- The key understandings cited in Task 7.5 Roadway and Traffic Plans also apply to Task 8.6.

8.7 Hydrology and Hydraulics, Local Drainage, and Water Quality Plans

CONSULTANT will prepare a Final Drainage Report specific to the Old Redwood Highway widening scope of services included in CN 001 to identify and discuss impacts from Project development on local hydrology and hydraulics in support of the Local Drainage Plans developed under this task. Final hydrologic calculations will be completed for existing and proposed conditions to identify overall changes in Project runoff in accordance with the Sonoma County Water Agency Flood Control Design Criteria consistent with the scope of services for the Hydrologic Evaluation under Task 7.6 *Hydrologic and Hydraulic Evaluation* above.

CONSULTANT will prepare 65% Local Drainage Plans for Old Redwood Highway that incorporate SMART and County of Sonoma review comments on the 35% submittal. The Local Drainage Plans will also be updated to address the final calculations/analysis included in the Final Drainage Report, and the plans will include the same features for the Local Drainage Plans as defined under Task 7.9. CONSULTANT will continue to coordinate with the County of Sonoma on the design of storm drain systems located within their right-of-way at Weekly Design Progress Meetings and at Weekly Technical Task Force Meetings.

For storm drain facilities to be relocated in Old Redwood Highway, the 65% Local Drainage Plans will include relocation strategies in both plan and profile view that include information on pipe material type, diameter, and slope. CONSULTANT assumes that the existing storm drain system at the low point of Old Redwood Highway will need to be improved consistent with the recommendations included in the Old Redwood Highway Grade Separation White Paper for the

purpose of establishing a budgeted level of effort for CN 001.

Task 8.7 Deliverables

- Final Drainage Report specific to the Old Redwood Highway widening
- 65% Local Drainage Plans for the Old Redwood Highway widening: 4 sheets
- 65% Storm Drain Plans and Profiles for the Old Redwood Highway widening: 4 sheets including general notes, details, and plan and profiles

Task 8.7 Key Understandings

- The key understandings cited in Task 7.6 Hydrologic and Hydraulic Evaluations above also apply to Task 8.7

8.8 Utility Relocation Plans

CONSULTANT will prepare 65% Utility Relocation Plans for the Old Redwood Highway scope of services under CN 001 that incorporate SMART and stakeholder review comments on the 35% submittal. The plans will include the features and information defined under Task 7.10 *Utility Plans* in addition to updated existing utility mapping stemming from additional as-built information as it's received from the County of Sonoma and private utility owners. For existing utilities in Old Redwood Highway that have been added or modified after the 35% design milestone submittal, CONSULTANT will detail proposed relocation strategies if such utilities warrant relocation as dictated in the approach outlined under Task 7.10.

CONSULTANT will continue to support SWH in collaborating with SMART, the County of Sonoma, and private utility owners during the 65% Design Level Preliminary Engineering Phase at Weekly Technical Task Force Meetings and at Weekly Design Progress Meetings to define the extent of utility relocations located in the Old Redwood Highway right-of-way.

CONSULTANT assumes that there are no County-owned water and sewer facilities that exist within the widened footprint of Old Redwood Highway.

Task 8.8 Deliverables

- 65% Utility Plans for the Old Redwood Highway widening: 4 sheets

Task 8.8 Key Understandings

- The key understandings cited in Task 7.10 *Utility Plans* also apply to Task 8.8
- CONSULTANT assumes that SWH will continue to be responsible for leading the following public and private utility coordination tasks specific to the Old Redwood Highway widening during the 65% Design Level Preliminary Engineering Phase:
 - Letter of Concurrence with the County of Sonoma and private utilities on the project's approach to utility relocation design
 - Draft Utility Agreements that include scope, estimate, and schedule
 - Draft Relocation Letters sent to SMART for feedback which will be sent to utility owners following completion of potholing and confirmation of all utility conflicts.
 - Existing utility permits and franchise obtained
 - Cost recovery accounts analysis initiated

8.12 Right-of-Way/TCE Plans

CONSULTANT will prepare 65% Right-of-Way plans for the Old Redwood Highway widening that depict the existing right-of-way mapping developed under Task 4.4 *Right-of-Way Evaluation*. Proposed right-of-way linework will be developed to accommodate the latest proposed roadway widening design and referenced in the project's preliminary right-of-way plans. Furthermore, proposed TCE required for construction, as defined by SWH, will be included in the preliminary right-of-way plans.

CONSULTANT will identify all easements and restrictions and develop an approach to resolving any restrictions to constructing the proposed roadway widening. In addition, CONSULTANT will develop draft legal descriptions for all impacted parcels and conduct field surveys to locate and tie in existing land net monuments and relevant County monuments, including preparation of field notes and monument recovery, corner restoration and monument preservation. Monument preservation shall adhere to County of Sonoma requirements. The final position of right-of-way will be established based on an analysis of field and record information.

Task 8.12 Deliverables

- Right of Way Plans for the Old Redwood Highway widening: 2 sheets
- Draft Legal descriptions

Task 8.12 Key Understandings

- The key understandings cited in Task 4.4 Right-of-Way Evaluation above shall also apply to Task 8.12 in addition to the key understanding below.
- A preferred roadway widening alternative will be selected by SMART within one month of the CN 001 NTP that will define the project's right-of-way requirements. For budgeting purposes, CONSULTANT assumes that one (1) sliver take of an adjacent parcel will be required.

8.13 Retaining Wall Plans

CONSULTANT will finalize the retaining wall design for Old Redwood Highway and depict their final locations in Retaining Wall Plans based on the scope of services under CN 001 that incorporate SMART and stakeholder review comments on the 35% submittal. Given the compressed schedule of the CN 001 65% design phase, CONSULTANT will secure over-the-shoulder reviews from County staff at Weekly Design Progress Meetings and at Weekly Technical Task Force Meetings as budgeted under Task 2.2.3 above. Profiles will be developed for each retaining wall that will detail begin and end positions, base of wall elevations, top of wall elevations, top of wall profile, finished grade, and existing grade.

Task 8.13 Deliverables

- 65% Retaining Wall Plans for the Old Redwood Highway widening: 4 Sheets
- 65% Retaining Wall Details for the Old Redwood Highway widening: 2 Sheets
- 65% Retaining Wall Profiles for the Old Redwood Highway widening: 2 sheets with two wall profiles on each sheet

Task 8.13 Key Understandings

- The key understandings cited in Task 7.3 Rail Bridges, Retaining Walls, and NMP

Bridges also apply to Task 8.13.

Task 8 Deliverables

- Task 8.6 Civil/Roadway and Traffic Plans
 - 65% Roadway Plans for the Old Redwood Highway widening
 - 65% Roadway Typical Sections for the Old Redwood Highway widening
 - 65% Roadway Details and Pavement Sections for the Old Redwood Highway widening
 - 65% Signing and Striping Plans for the Old Redwood Highway Widening
- Task 8.7 Structure Hydrology and Hydraulics, Local Drainage, and Water Quality Plans
 - Final Drainage Report specific to the Old Redwood Highway widening
 - 65% Local Drainage Plans for the Old Redwood Highway widening
 - 65% Storm Drain Plans and Profiles for the Old Redwood Highway widening
- Task 8.8 Utility Relocation Plans
 - 65% Utility Plans for the Old Redwood Highway widening
- Task 8.12 Right-of-Way/TCE Plans
 - Right of Way Plans for the Old Redwood Highway widening
 - Legal descriptions
- Task 8.13 Retaining Wall Plans
 - 65% Retaining Wall Plans for the Old Redwood Highway widening
 - 65% Retaining Wall Details for the Old Redwood Highway widening
 - 65% Retaining Wall Profiles for the Old Redwood Highway widening

Task 8 Key Understandings

- Task 8.6 Civil/Roadway and Traffic Plans
 - The key understandings cited in Task 7.5 Roadway and Traffic Plans also apply to Task 8.6.
- Task 8.7 Structure Hydrology and Hydraulics, Local Drainage, and Water Quality Plans
 - The key understandings cited in Task 7.6 Hydrologic and Hydraulic Evaluations also apply to Task 8.7
- Task 8.8 Utility Relocation Plans
 - The key understandings cited in Task 7.10 *Utility Plans* also apply to Task 8.8
 - CONSULTANT assumes that SWH will continue to be responsible for leading the following public and private utility coordination tasks during the 65% Design Level Preliminary Engineering Phase:
 - Letter of Concurrence with County of Sonoma and private utilities on the approach to utility relocation design

- Draft Utility Agreements that include scope, estimate, and schedule
- Draft Relocation Letters sent to SMART for feedback which will be sent to utility owners following completion of potholing and confirmation of all utility conflicts.
- Existing utility permits and franchise obtained
- Cost recovery accounts analysis initiated
- Task 8.12 Right-of-Way/TCE Plans
 - The key understandings cited in Task 4.4 Right-of-Way Evaluation above shall also apply to Task 8.12 in addition to the key understanding below.
 - A preferred roadway widening alternative will be selected by SMART within one month of the CN 001 NTP that will define the project's right-of-way requirements. For budgeting purposes, CONSULTANT assumes that one (1) sliver take of an adjacent parcel will be required.
- Task 8.13 Retaining Wall Plans
 - The key understandings cited in Task 7.3 Rail Bridges, Retaining Walls, and NMP Bridges also apply to Task 8.13.

Phase I – 100% Final Design

Task 9 – 100% Final Design

CONSULTANT will prepare 100% Final Design Level engineering plans and specifications associated with the Old Redwood Highway widening scope of services under CN 001 that are structured and formatted in accordance with the SMART CADD Manual. Upon submission of the 65% Design Level Preliminary Engineering Plans and Specifications to SMART and the County of Sonoma, CONSULTANT will initiate the 100% Final Design Level Engineering phase to expedite the CN 001 design schedule. CONSULTANT will prepare responses to all review comments received from SMART and project stakeholders on the 65% design submittal milestone related to CONSULTANT'S CN 001 scope of services and participate in subsequent comment resolution meetings to reach final consensus on the dispositions of all review comments. All agreed upon review comments will be incorporated into the Old Redwood Highway widening plans and specifications by the CONSULTANT in parallel with the CN 001 100% design development process.

CONSULTANT assumes that the 100% design milestone submittal will be subject to the County of Sonoma formal design review process.

CONSULTANT Activities

9.6 Civil/Roadway and Traffic Plans

CONSULTANT will prepare 100% Roadway, Roadway Typical Sections, Roadway Details, and Signing & Striping Plans specific to the CN 001 scope of services. Given the compressed schedule of the CN 001 100% design phase, CONSULTANT will secure over-the-shoulder reviews from County staff at Weekly Design Progress Meetings and at Weekly Technical Task Force Meetings as budgeted under Task 2.2.3 above.

Roadway Plans

CONSULTANT will prepare 100% Roadway Plans that incorporate SMART and County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the roadway features and information defined under Task 8.6 to a 100% design level during this phase.

Signing and Striping Plans

CONSULTANT will prepare 100% Signing and Striping Plans for Old Redwood Highway that incorporate SMART and the County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the signing and striping features and information defined under Task 8.6 to a 100% design level during this phase.

Roadway Typical Sections

CONSULTANT will prepare 100% Roadway Typical Sections for Old Redwood Highway that incorporate SMART and the County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the roadway typical sections to a 100% design level during this phase.

Roadway Details and Pavement Sections

CONSULTANT will prepare 100% Roadway Details and Pavement Sections for Old Redwood Highway that incorporate SMART and the County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the roadway details and pavement sections to a 100% design level during this phase.

Task 9.6 Deliverables

- 100% Roadway Plans for the Old Redwood Highway widening: 4 sheets
- 100% Roadway Typical Sections for the Old Redwood Highway widening: 1 sheet
- 100% Roadway Details and Pavement Sections for the Old Redwood Highway widening: 2 sheets
- 100% Signing and Striping Plans for the Old Redwood Highway widening: 4 sheets

Task 9.6 Key Understandings

- The key understandings cited in Task 8.6 Roadway and Traffic Plans also apply to Task 9.6.

9.7 Hydrology and Hydraulics, Local Drainage, and Water Quality Plans

CONSULTANT will prepare 100% Local Drainage Plans for Old Redwood Highway that incorporate SMART and County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the drainage design to a 100% design level during this phase.

Task 9.7 Deliverables

- 100% Local Drainage Plans for the Old Redwood Highway widening: 4 sheets
- 100% Storm Drain Plans and Profiles for the Old Redwood Highway widening: 4 sheets including general notes, details, and plan and profiles

Task 9.7 Key Understandings

- The key understandings cited in Task 8.7 Hydrology and Hydraulics, Local Drainage, and

Water Quality Plans above also apply to Task 9.7

9.8 Utility Relocation Plans

CONSULTANT will prepare 100% Utility Relocation Plans for the Old Redwood Highway scope of services under CN 001 that incorporate SMART and stakeholder review comments on the 65% submittal. CONSULTANT will advance the utility design to a 100% design level during this phase.

CONSULTANT will continue to support SWH in collaborating with SMART, the County of Sonoma, and private utility owners during the 100% phase at Weekly Technical Task Force Meetings and at Weekly Design Progress Meetings to define the extent of utility relocations located in the Old Redwood Highway right-of-way.

Task 9.8 Deliverables

- 100% Utility Plans for the Old Redwood Highway widening: 4 sheets

Task 9.8 Key Understandings

- The key understandings cited in Task 8.8 *Utility Plans* also apply to Task 9.8
- CONSULTANT assumes that SWH will continue to be responsible for leading the following public and private utility coordination tasks specific to the Old Redwood Highway widening during the 100% phase:
 - Letter of Concurrence with the County of Sonoma and private utilities on the project's approach to utility relocation design
 - Draft Utility Agreements that include scope, estimate, and schedule
 - Draft Relocation Letters sent to SMART for feedback which will be sent to utility owners following completion of potholing and confirmation of all utility conflicts.
 - Existing utility permits and franchise obtained
 - Cost recovery accounts analysis initiated

9.12 Right-of-Way/TCE Plans

CONSULTANT will prepare 100% Right-of-Way plans for the Old Redwood Highway widening that depict proposed right-of-way linework to accommodate the final proposed roadway widening design. Furthermore, the final TCE required for construction, as defined by SWH, will be included in the final right-of-way plans.

CONSULTANT will identify all easements and restrictions and develop an approach to resolving any restrictions to constructing the proposed roadway widening. In addition, CONSULTANT will develop final legal descriptions for all impacted parcels and conduct field surveys to locate and tie in existing land net monuments and relevant County monuments, including preparation of field notes and monument recovery, corner restoration and monument preservation. Monument preservation shall adhere to County of Sonoma requirements. The final position of right-of-way will be established based on an analysis of field and record information.

Task 9.12 Deliverables

- 100% Right of Way Plans for the Old Redwood Highway widening: 2 sheets
- Final legal descriptions

Task 9.12 Key Understandings

- The key understandings cited in Task 8.12 Right of Way Plans above shall also apply to Task 9.12.

9.13 Retaining Wall Plans

CONSULTANT will prepare 100% Retaining Wall Plans for Old Redwood Highway that incorporate SMART and County of Sonoma review comments on the 65% submittal. CONSULTANT will advance the retaining wall design to a 100% design level during this phase.

Task 9.13 Deliverables

- 100% Retaining Wall Plans for the Old Redwood Highway widening: 4 Sheets
- 100% Retaining Wall Details for the Old Redwood Highway widening: 2 Sheets
- 100% Retaining Wall Profiles for the Old Redwood Highway widening: 2 sheets with two wall profiles on each sheet

Task 9.13 Key Understandings

- The key understandings cited in Task 8.13 Retaining Wall Plans also apply to Task 9.13.

Task 9 Deliverables

- Task 9.6 Civil/Roadway and Traffic Plans
 - 100% Roadway Plans for the Old Redwood Highway widening
 - 100% Roadway Typical Sections for the Old Redwood Highway widening
 - 100% Roadway Details and Pavement Sections for the Old Redwood Highway widening
 - 100% Signing and Striping Plans for the Old Redwood Highway Widening
- Task 9.7 Structure Hydrology and Hydraulics, Local Drainage, and Water Quality Plans
 - 100% Local Drainage Plans for the Old Redwood Highway widening
 - 100% Storm Drain Plans and Profiles for the Old Redwood Highway widening
- Task 9.8 Utility Relocation Plans
 - 100% Utility Plans for the Old Redwood Highway widening
- Task 9.12 Right-of-Way/TCE Plans
 - 100% Right of Way Plans for the Old Redwood Highway widening
 - Final legal descriptions
- Task 9.13 Retaining Wall Plans
 - 100% Retaining Wall Plans for the Old Redwood Highway widening
 - 100% Retaining Wall Details for the Old Redwood Highway widening
 - 100% Retaining Wall Profiles for the Old Redwood Highway widening

Task 9 Key Understandings

- Task 9.6 Civil/Roadway and Traffic Plans

- The key understandings cited in Task 8.6 Roadway and Traffic Plans also apply to Task 9.6.
- Task 9.7 Structure Hydrology and Hydraulics, Local Drainage, and Water Quality Plans
 - The key understandings cited in Task 8.7 Hydrologic and Hydraulic Evaluations also apply to Task 9.7
- Task 9.8 Utility Relocation Plans
 - The key understandings cited in Task 8.8 Utility Relocation Plans also apply to Task 9.8
 - CONSULTANT assumes that SWH will continue to be responsible for leading the following public and private utility coordination tasks during the 100% Design Phase:
 - Letter of Concurrence with County of Sonoma and private utilities on the approach to utility relocation design
 - Draft Utility Agreements that include scope, estimate, and schedule
 - Draft Relocation Letters sent to SMART for feedback which will be sent to utility owners following completion of potholing and confirmation of all utility conflicts.
 - Existing utility permits and franchise obtained
 - Cost recovery accounts analysis initiated
- Task 9.12 Right-of-Way/TCE Plans
 - The key understandings cited in Task 8.12 Right-of-Way Plans above shall also apply to Task 9.12.
- Task 9.13 Retaining Wall Plans
 - The key understandings cited in Task 8.13 Retaining Wall Plans also apply to Task 9.13.